January 1980

Nebraska Summary 001: Massey Ferguson 240 Diesel 8 Speed

Tractor Museum
University of Nebraska-Lincoln, TractorMuseumArchives@unl.edu

SUMMARY OF OECD TEST 688—NEBRASKA SUMMARY 001
MASSEY FERGUSON 240 DIESEL
8 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP *(kW)*	Crank shaft speed rpm	Fuel Consumption Gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—679 rpm)					
42.9 *(32.0)*	2250	2.62 *(9.93)*	0.432 *(0.263)*	16.34 *(3.22)*	
Standard Power Take-off Speed (540 rpm)					
37.7 *(28.1)*	1789	2.16 *(8.16)*	0.406 *(0.247)*	17.46 *(3.44)*	Air temperature
VARING POWER AND FUEL CONSUMPTION					68°F *(21°C)*
37.8 *(28.2)*	2380	2.40 *(9.08)*	0.449 *(0.273)*	15.79 *(3.11)*	
....	2452	0.73 *(2.77)*	....	....	Relative humidity
19.0 *(14.2)*	2401	1.45 *(5.50)*	0.541 *(0.329)*	13.10 *(2.58)*	67%
44.0 *(32.8)*	2360	2.74 *(10.37)*	0.441 *(0.268)*	16.04 *(3.16)*	Barometer
9.5 *(7.1)*	2415	1.09 *(4.12)*	0.806 *(0.490)*	8.73 *(1.72)*	29.97" Hg *(101.5 kPa)*
28.4 *(21.2)*	2390	1.86 *(7.04)*	0.464 *(0.282)*	15.28 *(3.01)*	

Maximum Torque 117.6 lb. ft *(159.5 Nm)* @ 1400 RPM
Maximum Torque Rise 20%

DRAWBAR PERFORMANCE

Power Hp *(kW)*	Drawbar pull *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
75% of Pull at Maximum Power—Five Hours 4th (L4) Gear									
30.4 *(22.7)*	2770 *(12.3)*	4.13 *(6.64)*	2404	6.0	0.500 *(0.304)*	14.16 *(2.79)*	178 *(81)*	48 *(9)*	29.85 *(101.1)*
MAXIMUM POWER IN SELECTED GEARS									
2nd Gear (L2)									
30.0 *(22.4)*	5620 *(25.0)*	2.01 *(3.23)*	2372	15.0	0.569 *(0.346)*	12.44 *(2.45)*	160 *(71)*	46 *(8)*	29.77 *(100.8)*
3rd Gear (L3)									
38.0 *(28.3)*	4990 *(22.2)*	2.85 *(4.59)*	2360	11.8	0.511 *(0.311)*	13.81 *(2.72)*	171 *(77)*	43 *(6)*	29.77 *(100.8)*
4th Gear (L4)									
38.8 *(28.9)*	3690 *(16.4)*	3.94 *(6.34)*	2360	8.0	0.485 *(0.295)*	14.57 *(2.87)*	180 *(82)*	43 *(6)*	29.91 *(101.3)*
5th Gear (H1)									
40.0 *(29.8)*	2470 *(11.0)*	6.06 *(9.75)*	2360	5.3	0.480 *(0.292)*	14.77 *(2.91)*	178 *(81)*	45 *(7)*	29.91 *(101.3)*
6th Gear (H2)									
39.9 *(29.0)*	1600 *(7.1)*	9.14 *(14.70)*	2360	3.5	0.480 *(0.292)*	14.77 *(2.91)*	176 *(80)*	46 *(8)*	29.91 *(101.3)*

Location of Test: National Institute of Agricultural Engineering, Silsoe, England

Dates of Test: September, 1979 to March, 1980

Manufacturer: Massey-Ferguson Manufacturing Company, Banner Lane, Coventry, Warwickshire, England

FUEL AND OIL: Fuel No. 2 Diesel **Cetane No.** 56.0 **Specific gravity converted to 60°/60°F** *(15°/15°C)* 0.848 **Fuel weight** 7.06 lbs/gal *(0.846 kg/l)* **Oil SAE** 20W/30 **Oil Consumption for 10 hours** 0.56 lb *(252 gm)* **Transmission and final drive lubricant** Agricastrol MP SAE 20W/30

ENGINE: Make Perkins AD 3152 Diesel **Type** 3 cylinder vertical **Serial No.** CE 22488 U566141E **Crankshaft** lengthwise **Rated engine speed** 2250 **Bore and stroke** 3.6" × 5.0" *(91.4 mm × 127 mm)* **Compression ratio** 18.5 to 1 **Displacement** 153 cu in *(2500 ml)* **Starting system** 12 volt **Air cleaner** A.C. oil bath + centrifugal precleaner **Oil filter** full flow cannister **Fuel filter** C.A.V. dual element with sediment bowl **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type Standard-two wheel drive **Serial No.** 500087 **Tread width** rear 52.4" *(1330 mm)* to 76.5" *(1942 mm)* front 49" *(1245 mm)* to 73.1" *(1857 mm)* **Wheel base** 74.5" *(1892 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph *(km/h)*** first 1.55 *(2.49)* second 2.27 *(3.65)* third 3.10 *(4.99)* fourth 4.16 *(6.70)* fifth 6.19 *(9.96)* sixth 9.08 *(14.61)* seventh 12.40 *(19.95)* eighth 16.64 *(26.78)* reverse 2.11 *(3.39)*, 8.43 *(13.56)* **Clutch** dual-dry operated by foot pedal **Brakes** drum-internal, expanding **Steering** mechanical **Power take-off** 540 rpm at 1789 engine rpm **Unladen tractor mass** 3521 lbs *(1597 kg)*.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

TRACTOR SOUND LEVEL	dB(A)
Maximum sound level—in 5th (H1) Gear	101
Bystander in 8th (H4) gear	87

CENTER OF GRAVITY

Horizontal distance forward from centerline of rear wheels	29.7″ *(755 mm)*
Vertical distance above roadway	24.5″ *(623 mm)*
Horizontal distance from center of rear wheel tread 0″ *(0 mm)* to the right/left	

TURNING ON A CONCRETE SURFACE

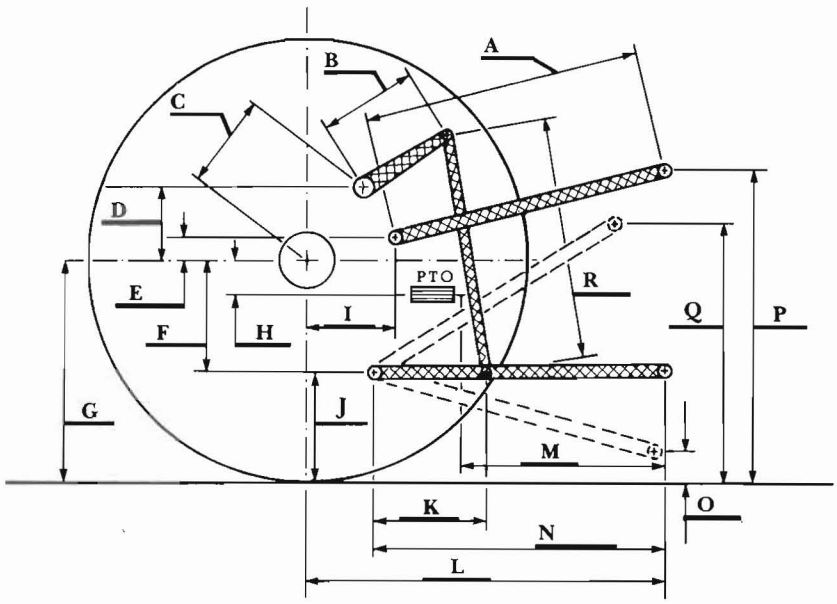
Turning radius—with brake applied right 117″ *(2.97 m)* left 118″ *(3.00 m)*
—without brake right 131″ *(3.32 m)* left 128″ *(3.25 m)*
Turning space radius—with brake applied right 120″ *(3.06 m)* left 122″ *(3.09 m)*
—with brake right 134″ *(3.41 m)* left 131″ *(3.34 m)*

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Two 12.4/11-28; 6; na	Two 12.4/11-28; 6; na
Ballast	—Liquid (total)	697 lb *(316 kg)*	None
	—Cast Iron (total)	2623 lb *(1190 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 6.00-16; 6; na	Two 6.00-16; 6; na
Ballast	—Liquid (total)	None	None
	—Cast Iron (total)	419 lb *(190 kg)*	None
Height of Drawbar		13.8 in *(350 mm)*	13.0 in *(330 mm)*
Static Weigbt	—Rear	5300 lb *(2404 kg)*	2066 lb *(937 kg)*
	—Front	1960 lb *(889 kg)*	1455 lb *(660 kg)*
	—Total	7260 lb *(3293 kg)*	3521 lb *(1597 kg)*

THREE POINT HITCH PERFORMANCE (STATIC TEST)

CATEGORY: I OR II
Quick Attach: None

Maximum Force Exerted Through Whole Range:	2590 lbs *(11.5 kN)*
i) Opening pressure of relief valve:	2540 psi *(17.5 MPa)*
Sustained pressure of the open relief valve:	2730 psi *(18.8 MPa)*
ii) Pump delivery rate at minimum pressure and rated engine speed:	5.2 GPM *(19.8 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	5.2 GPM *(19.8 l/min)*
Delivery pressure:	2540 psi *(17.5 MPa)*
Power:	7.8 Hp *(5.8 kW)*



Hitch Dimensions as Tested — No Load

	inch	*mm*
A	27.5	*698*
B	10.5	*267*
*C	12.0	*305*
D	9.2	*233*
E	10.7	*273*
F	4.5	*114*
G	23.2	*590*
H	5.3	*136*
I	5.3	*134*
J	18.7	*476*
K	17.6	*448*
L	32.7	*829*
M	21.0	*533*
N	34.4	*873*
O	7.1	*180*
P	36.7	*932*
Q	34.5	*878*
R	22.5	*571*

*rockshaft is ahead of rear axle.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. ROPS certification weight limit — 5000 lb *(2268 kg)*.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **688,** Nebraska Summary 001, February 9, 1987.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director